BLANKOM®

Professional Headend Solutions

ATC–199 instructions

TWIN ASI Transmodulator

ASI-TS → CI → ATV (AM)

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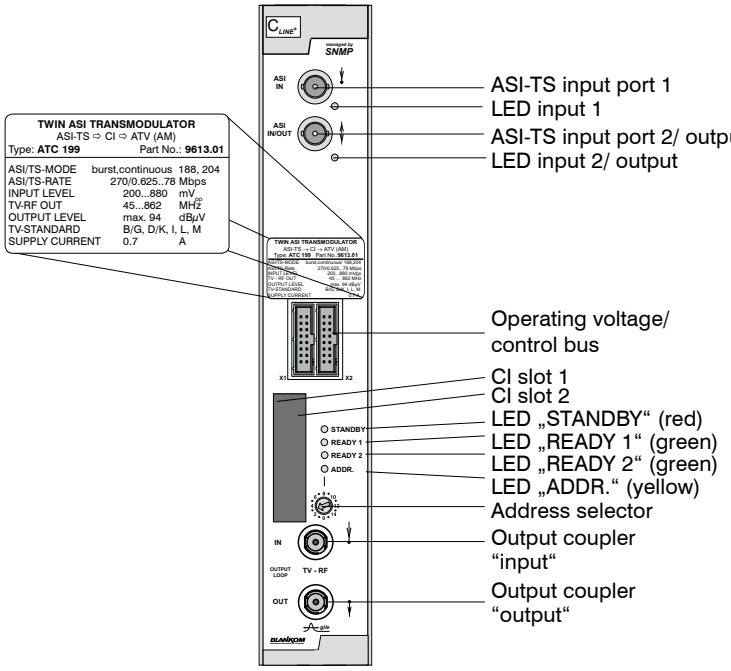
ATC 199

Part N°: 9613.01

...setting Signals

4. Front view



gile

managed by
SNMP

5. Functional description

With this transmodulator, the digital ASI signal is decoded and then transferred into a serial data stream. Next, that data stream is parallelised and fed into a FIFO system. The timing of this data input will in all cases be adapted to the general data input rate. The regeneration system for the transport stream SPI protocol follows at the FIFO system output, and at the same time, recognition of the transport stream being correct is ensured. It is at this level that the transport stream can be edited. The transport stream will be fed directly to the DVB module or via the Common Interface.* The DVB module consists of the demultiplexer and the MPEG decoder. The DVB module generates an analogue video- and audio signal. The ATC 199 supports services like Teletext, VPS, WSS, optional test lines, the flash of subtitles, the insertion of black bars and BISS decryption. The BISS mode 1 and the BISS mode E with input of the necessary Injected ID are supported, but not the BISS mode E with the additional input of the optional Buried ID.
Using the black-bar-option it can be selected, where the black bar will be inserted (left, right, above or below the image). The width of the bar can be selected in % related to standard 4:3 format. Different values for 16:9- and special 16:9 format can be adjusted. The activation of the black bar is only possible when adjusted colour system is PAL and the video format is letterbox. A timer-controlled activation of this option is supported by HCB 100 (9650.04/.05) or HCB 200/ 300 with software version 3.26 or higher.
The analogue signals feed the IF modulators. After IF filtering follows the conversion into the wanted output channels.
Two independent adjustable channels (output frequency and level) are available at the output. The second ASI port can be adjusted as input or loop trough output by software. Outputs are performed in loop through technology therefore distribution and combining are realized within the module.

* The design of the Common interface of this module is done according to DVB standards. Because of the dependencies in interaction of the DVB signals, CA modules and smart cards we can not assure a general functional capability for all application possibilities. Please contact our service department for further assistance.

6. Adjustments

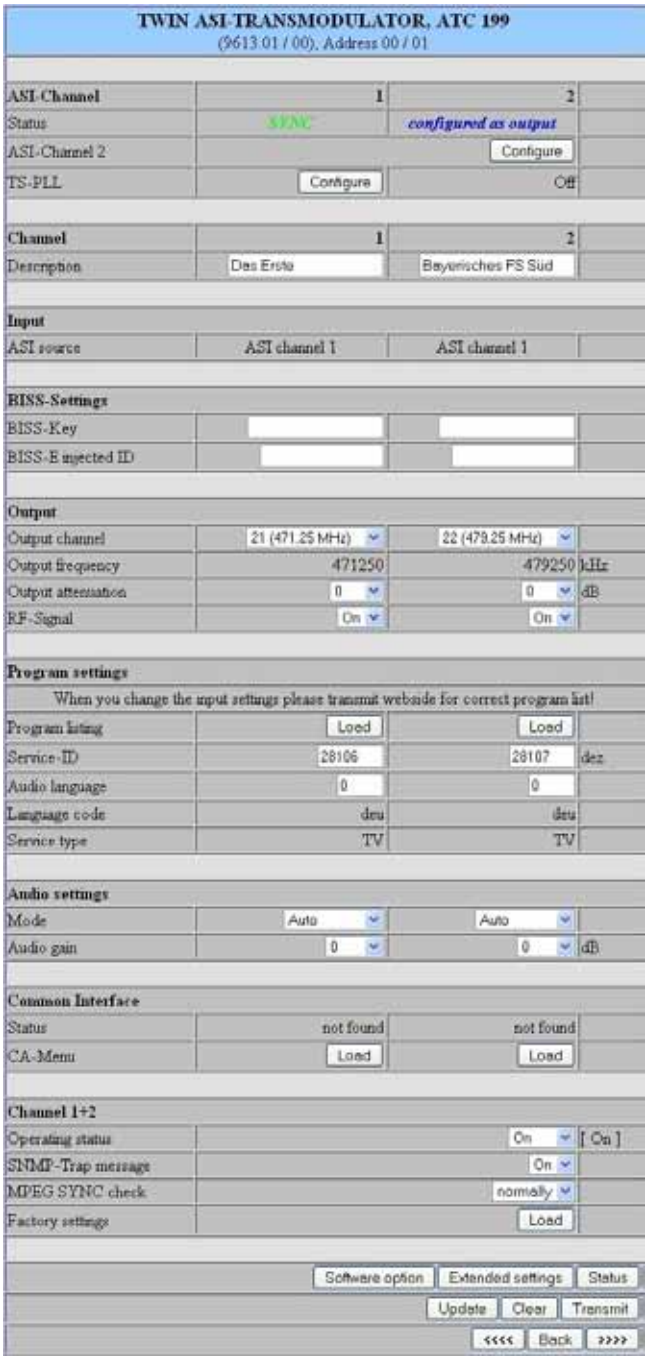
6.1 Adjustment with the Headend Controller

- Adjustment of the addresses at the Bus Extender BEB x00 and at the modules
- Activation of the programming mode on each module by selecting the line (BEB x00) and the module position (01... 15) at the Headend Controller (HCB x00)
  → yellow LED illuminates until the beginning of the parameter adjustment
- Adjustment of the ATC 199 parameters (see chapter 9) → green LED is switched on
- After the programming the ATC 199 will be automatically switched into the operating mode
  → yellow LED flashes shortly/ green LED is switched on

The manual instructions of the Headend Controller HCB x00 and the Bus Extender BEB x00 have to be considered!

8. Programming by web server*

8.1 Main menu



name of device, item number, address in head end

ASI-Channel displays the respective ASI channel (1/ 2**)**

Status If channel is an input (channel 1 always, channel 2 after configuration), there is displays whether **SYNC**hronization or **noSYNC**hronization with input. If channel 2 is configured as output, there is displayed: "configured as output"

ASI-Channel 2 configuration button of ASI channel 2 (see menu 1)

TS-PLL configuration button to enable or disable of the TS-PLL 1 (see menu 2)

Channel displays the respective modulator channel

Description name of programme (max. 30 characters)

Input

ASI source displays which ASI channel is used as source of the TS. If ASI port 2 is configured as input, it will be the source of the modulator channel automatically. Otherwise the ASI port 1 is the TS source of both modulator channels.

BISS-Settings

(will only be available if "BISS decryption" option is on)

BISS-Key input of the 12-digit code in BISS mode 1 or of the 16-digit code in BISS mode E

BISS-E injected ID input of the 14-digit code in BISS mode E, no input in BISS mode 1!

Program settings

Program listing see menu 3

Service-ID adjustment range: 0...65535

Audio language adjustment range: 0...255

Language code displays the code for the language selected

Service type displays the type of service selected (TV, radio)

Audio settings

Mode selection: monoL+R, monoL, monoR, dual, dual invers, stereo, auto

Audio gain adjustment range: +6...-20 dB

Common Interface

Status displays the type of the CA module per slot

CA-Menu see menu 4

Channel 1+2

Operating status selection: On, Off, Reset

SNMP-Trap mess. On/ Off, if SNMP option in HCB x00 enabled, otherwise "locked" displays

MPEG SYNC check selection: fast, normally, slowly

Factory settings see menu 5

Routing to the appropriate adjustment menu:

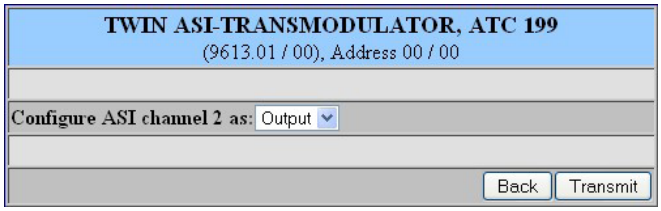
Extended settings see menu 7

Software option see menu 6

Status see menu 9

* For further details see the HCB manual

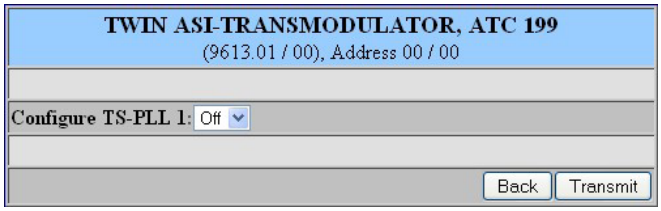
8.2 Configuration of ASI channel 2 (menu 1)



name of device, item number, address in head end

In this menu, the ASI channel 2 can be separately configured as an input or as an output to loop throught the ASI input stream.

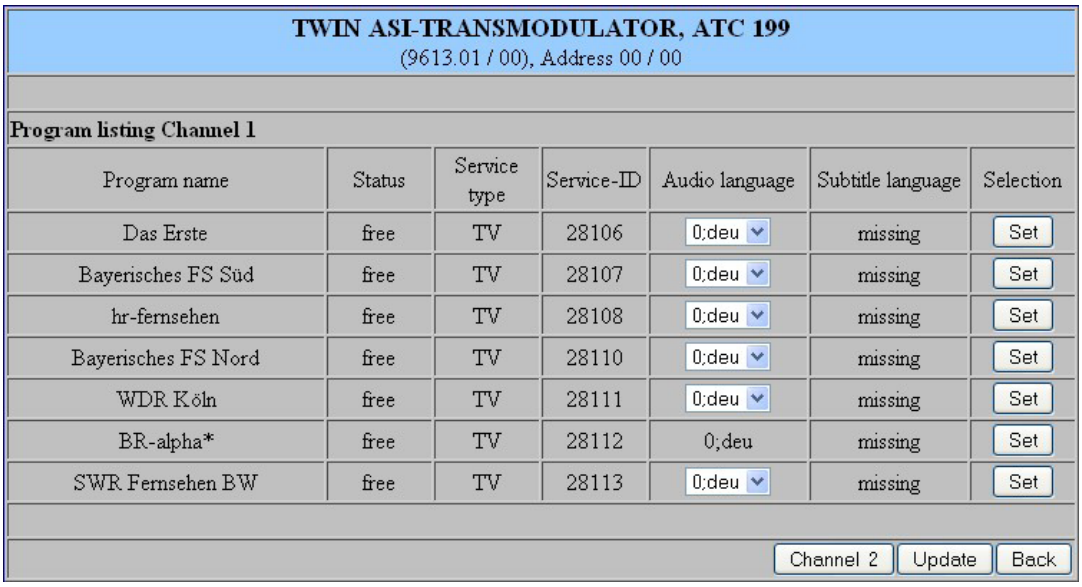
8.3 Configuration of TS-PLL 1 (menu 2)



name of device, item number, address in head end

Sources with normal distributed PCR jitter may be improved by this option. For those reasons the ASI front end channel 1 contains a TS stabilization based on a PLL. This functionality can be enabled or disabled in this menu (default: off). Multiplexers and IP gateways used for feeding adjust the PCR themselves, therefore the PLL should remain deactivated in those cases.

8.4 Loading the programme list (menu 3)



Program name	Status	Service type	Service-ID	Audio language	Subtitle language	Selection
Das Erste	free	TV	28106	0;deu	missing	Set
Bayerisches FS Süd	free	TV	28107	0;deu	missing	Set
hr-fernsehen	free	TV	28108	0;deu	missing	Set
Bayerisches FS Nord	free	TV	28110	0;deu	missing	Set
WDR Köln	free	TV	28111	0;deu	missing	Set
BR-alpha*	free	TV	28112	0;deu	missing	Set
SWR Fernsehen BW	free	TV	28113	0;deu	missing	Set

This menu contains a list of all services contained in the data stream. Language selection can take place here if available. Any service is adopted or given new settings by clicking the relevant “Set” button.

8.5 CA menu (menu 4)

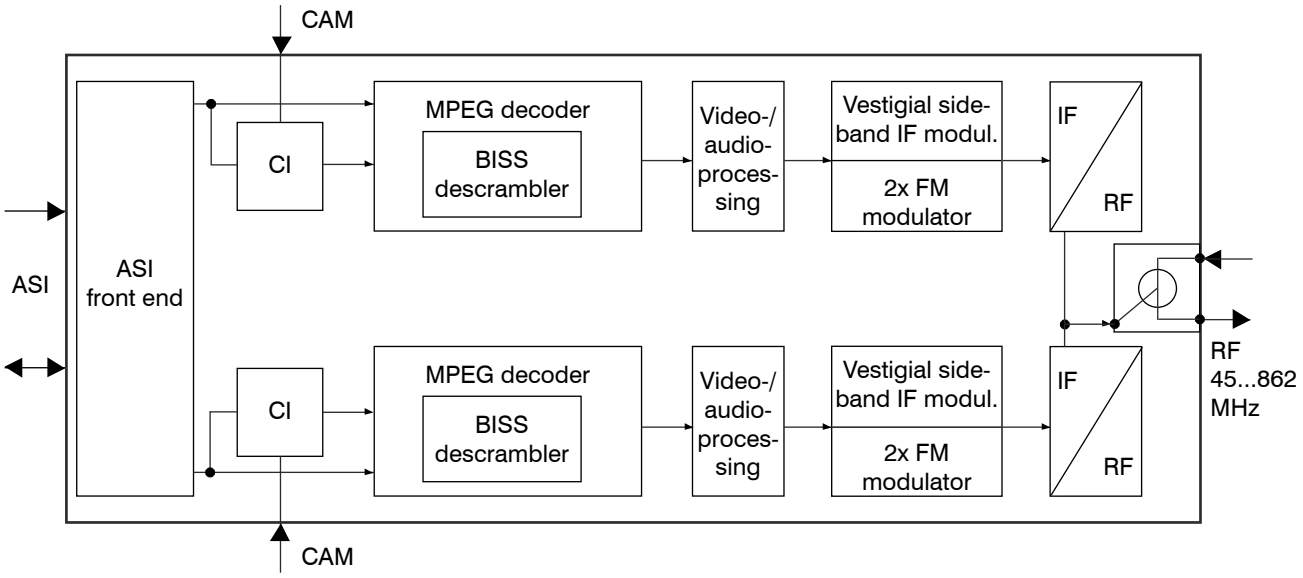
name of device, item number, address in head end

On these pages all menus implemented in the CA module are offered.The available menus are selected individually or are invoked one-by-one to do necessary settings or to get all informations about the CA module.

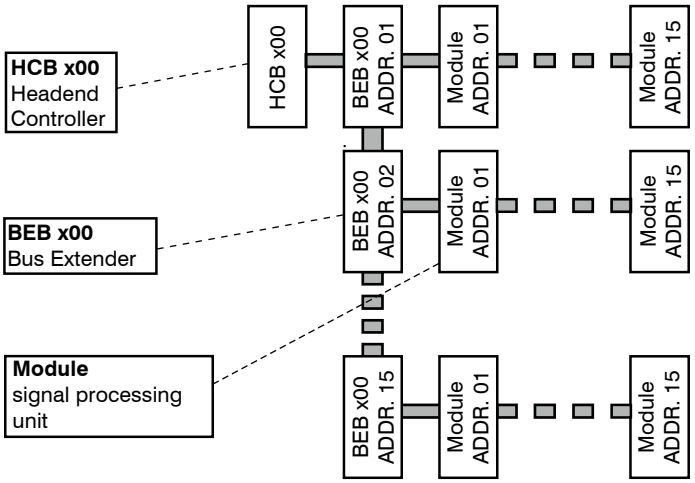
10. Trap messages

Item.	Message	Message type	Explanation
01	Signal OK	INFORMATION	input synchronized
02	Input not sync	WARNING	input not synchronized
03	MPEG error	CRITICAL	MPEG error
04	IIC Error	CRITICAL	IIC bus or hardware error
05	System reset	WARNING	reset by internal error
06	MPEG-Decoder not sync	WARNING	MPEG decoder not synchronized
07	Power fail	CRITICAL	power supply error
08	Audio mode=mono	INFORMATION	Audio mode is set as mono
09	Audio mode=summ mono	INFORMATION	Audio mode is set as mono total
10	Audio mode=mono1	INFORMATION	Audio mode is set as mono 1
11	Audio mode=mono2	INFORMATION	Audio mode is set as mono 2
12	Audio mode=stereo	INFORMATION	Audio mode is set as stereo
13	Audio mode=dual	INFORMATION	Audio mode is set as dual

11. Block diagram



12. Head end bus structure

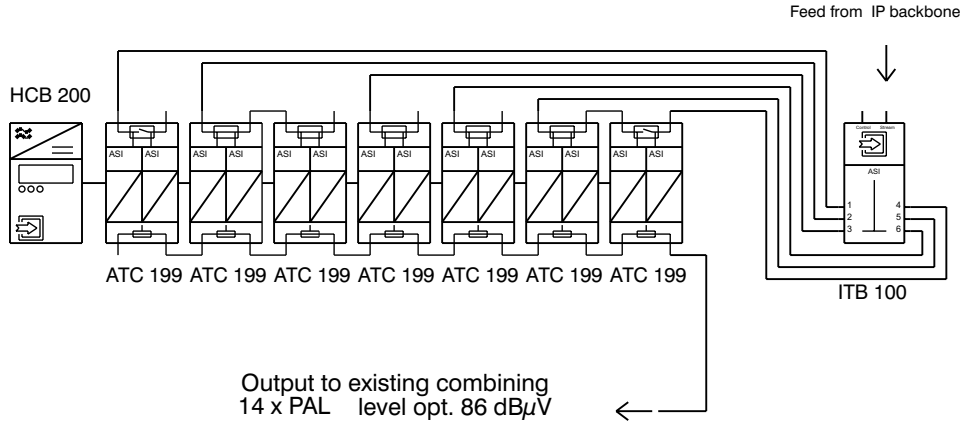


The number of the possible module connections (00 ... 15) to a BEB x00 depends on the total power consumption of this line!

13. Application example

Integration in existing C-LINE configuration

Conversion of different programs of different multi program transport streams into PAL


Feed from IP backbone
HCB 200
ATC 199 ATC 199 ATC 199 ATC 199 ATC 199 ATC 199 ATC 199
ITB 100
Output to existing combining
14 x PAL level opt. 86 dBµV

14. Technical data

ASI input

Level range	200 … 880 mV_{pp}
Data rate	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI polarity	regular/ inverted

ASI output

Level	800 mV_{pp} (± 10 %)
Data rate	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI polarity	normal

ASI signal processing

Data rate	0.625…78 Mbps
ASI transfer format	
Input	continuous, burst
Output	burst
TS transfer format	
Input	188, 204 Byte
Output	188, 204 Byte
Signal processing	EN 50083-9 [3]

Decryption interface

Common Interface	per channel PCMCIA-slot according to EN 50221 [4]
Operating voltage	5 V

TV output

TV standards	B/G, D/K, I, L, M
Sound procedure (B/G, D/K)	FM dual carrier
Sound (B/G, D/K)	mono/ stereo/ dual/ auto
Sound (I, L, M)	mono
Max. output level	94 dBµV
Level adjustment range	20 dB (0.5 dB steps)
Impedance	75 Ω
Connector	F socket
Through loss	≤ 1.5 dB
Output frequency range	45 … 862 MHz
Tuning step	125 kHz

Operating parameters

Voltage/ current	12 V (± 0.2 V) / 700 mA (without CA module)
Residual ripple of the supply voltage	≤ 10 mV_{pp}

Environmental conditions

Temperature range	-10 ... +55 °C
Temperature range for data keeping	5 ... 45 °C
Relative humidity	≤ 80 % (non condensing)
Method of mounting	vertical
Location of mounting	splash-proof and drip-proof

Miscellaneous

Dimensions (l x w x h)	
without 19”-adapter	50 x 276 x 148 mm
with 19”-adapter	50 x 301 x 148 mm
Weight	1,130 g

Delivery content

1 x bus connector
1 x F connecting cable 140 mm

Software options

Test lines	CKB 101	9650.51
Subtitling	CKB 102	9650.52
BISS decryption	CKB 104	9650.54
Insertion of black bars	CKB 106	9650.56

CE Declaration of Conformity

The Manufacturer

BLANKOM Antennentechnik GmbH · Hermann-Petersilge-Str. 1 · 07422 Bad Blankenburg · Germany

herewith declares the conformity of the product

Product name:	TWIN ASI Transmodulator
Type:	ATC 199
Product number:	9613.01

according to the following regulations

EN 50083-2
EN 60728-11 (as far as relevant)

and additional device-specific regulations, enclosed above, which this product is subjected to.

Date: 23.06.2010

Signature:

(Managing Director)